

# **Advancement Handbook for Aviation Electrician's Mate (AE)**

## **PREFACE**

The purpose of the Advancement Handbook is to help you focus your preparation for Navy-wide advancement-in-rating examinations. The bibliographies (BIBs) together with this handbook form a comprehensive examination study package. Since this handbook provides skill and knowledge components for each paygrade of the Aviation Electrician's Mate (AE) rating, it helps you concentrate your study on those areas that may be tested. This feature will help you get the most out of your study time.

Each page in Parts 1 through 4 of this Advancement Handbook presents general skill areas, specific skill areas, the knowledge factors associated with each skill area, the pertinent references that address each skill, and the subject areas that may be covered on the examination. The skill statements describe the skills you are expected to perform for each paygrade. The skill statements are cumulative; that is, you are responsible for the skills for the paygrade you are competing for, your present paygrade, and all paygrades below.

Although this handbook is very comprehensive, it cannot cover all the tasks performed in the rating. As a result, the advancement examinations may contain questions more detailed than described in the "*Exam Expectations*" section of the skill areas.

Remember that advancement competition is keen, so your keys to advancement include not only comprehensive advancement examination study but also sustained superior performance.

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## Part 1

### Advancement Handbook for AE3

## Advancement Handbook for AE3

General AE <i>Skill Area</i>	<b>Electrical Maintenance</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Analyze waveform and signal measurement data
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• Measuring current, resistance, and voltage</li> <li>• Analyzing signal data</li> <li>• Matter, energy, and electricity</li> <li>• Alternating and direct current</li> <li>• Ohm's law</li> <li>• Circuit control and protection devices</li> <li>• Test equipment</li> <li>• Wiring diagrams/schematics</li> <li>• Junction boxes</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Applicable Maintenance Instruction Manuals (MIMs)</li> <li>• Aviation Electrician's Mate 3 &amp; 2, Chapter 2 (NAVEDTRA 10348-G)</li> <li>• Navy Electricity and Electronics Training Series, Module 1, Chapters 1 and 3 (NAVEDTRA 172-01-00-98)</li> <li>• Navy Electricity and Electronics Training Series, Module 2, Chapter 1 (NAVEDTRA 172-02-00-98)</li> <li>• Navy Electricity and Electronics Training Series, Module 3 (NAVEDTRA 172-03-00-98)</li> <li>• Navy Electricity and Electronics Training Series, Module 16 (NAVEDTRA 172-16-00-98)</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about matter, energy, electricity, magnetism, AC and DC circuits, Ohm's law, fuses, circuit breakers, switches, relay panels/relays, junction boxes, wiring diagrams/schematics, signal data and test equipment.

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General AE <i>Skill Area</i>	<b>Electrical Maintenance</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Maintain cable assemblies and connectors
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• Wire number identification</li> <li>• Wiring diagrams</li> <li>• Stripping wire</li> <li>• Soldering</li> <li>• Repairing and replacing wires</li> <li>• Crimping contacts</li> <li>• Connector assemblies</li> <li>• Securing cable assemblies</li> <li>• Bonding wires</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Applicable Maintenance Instruction Manuals (MIMs)</li> <li>• Aviation Electrician's Mate 3 &amp; 2, Chapter 2 (NAVEDTRA 10348-G)</li> <li>• Installation Practices Aircraft Electric and Electronic Wiring (NAVAIR 01-1A-505)</li> <li>• Navy Electricity and Electronics Training Series, Module 4 (NAVEDTRA 172-04-00-98)</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about wiring diagrams, wire identification, wire sizes, insulating materials, wire stripping and crimping, soldering procedures, wire repair/replace procedures, connector identification and securing cable assemblies.

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General AE <i>Skill Area</i>	<b>Electrical Maintenance</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Maintain electrostatic discharge sensitive (ESDS) components
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• Hazards to ESD</li> <li>• Procedures used to handle ESDS devices</li> <li>• Procedures used to transport ESDS devices</li> <li>• Procedures used to store ESDS components.</li> <li>• Procedures used to troubleshoot ESDS components</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Applicable Maintenance Instruction Manuals (MIMs)</li> <li>• Aviation Electrician's Mate 3 &amp; 2, Chapter 2 (NAVEDTRA 10348-G)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume V, Chapter 22 (OPNAVINST 4790.2)</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the hazards to ESD-sensitive devices. You can also expect questions about policy, responsibilities, and requirements for handling, packaging, transporting, storing, and troubleshooting ESD-sensitive devices.

## Advancement Handbook for AE3

General AE <i>Skill Area</i>	<b>Electrical Maintenance</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Maintain electric motors and actuators
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• Physics</li> <li>• Principle of operation</li> <li>• EMF</li> <li>• Motor loads</li> <li>• DC motors</li> <li>• AC motors</li> <li>• Armatures</li> <li>• Motor construction</li> <li>• Motor types</li> <li>• Procedures used to troubleshoot electric motors and actuators</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Applicable Maintenance Instruction Manuals (MIMs)</li> <li>• Aviation Electrician's Mate 3 &amp; 2, Chapters 1 and 2 (NAVEDTRA 10348-G)</li> <li>• Navy Electricity and Electronics Training Series, Module 1, Chapter 1 (NAVEDTRA 172-01-00-98)</li> <li>• Navy Electricity and Electronics Training Series, Module 5, Chapters 2 and 4 (NAVEDTRA 172-05-00-98)</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about physics, motor operation, EMF, troubleshooting, motor types, construction, and loads.



## Advancement Handbook for AE3

General AE <i>Skill Area</i>	<b>Power Generation and Distribution Systems</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Maintain AC and DC power supplies
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• Inverters</li> <li>• Transformers</li> <li>• Transformer-Rectifiers</li> <li>• Autotransformers</li> <li>• Electronic power supplies</li> <li>• Filters</li> <li>• Inductance</li> <li>• Capacitance</li> <li>• Reactance</li> <li>• AC and DC current</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Applicable Maintenance Instruction Manuals (MIMs)</li> <li>• Aviation Electrician's Mate 3 &amp; 2, Chapter 3 (NAVEDTRA 10348-G)</li> <li>• Navy Electricity and Electronics Training Series, Module 1, Chapter 3 (NAVEDTRA 172-01-00-98)</li> <li>• Navy Electricity and Electronics Training Series, Module 2, (NAVEDTRA 172-02-00-98)</li> <li>• Navy Electricity and Electronics Training Series, Module 6 Chapter 3 (NAVEDTRA 172-06-00-98)</li> <li>• Navy Electricity and Electronics Training Series, Module 7 (NAVEDTRA 172-07-00-98)</li> </ul>

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about AC and DC, inductance, capacitance, reactance, transformers, power supplies, rectifiers, filters, semiconductor diodes, transistors, special devices, solid-state power supplies and troubleshooting/replacement of power supply components.</p>
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## Advancement Handbook for AE3

General AE <i>Skill Area</i>	<b>Power Generation and Distribution Systems</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Maintain AC and DC power generating systems
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• Batteries</li> <li>• Generators</li> <li>• APU's</li> <li>• Frequency control</li> <li>• Circuit protection</li> <li>• Voltage control</li> <li>• Power distribution</li> <li>• External power</li> <li>• Troubleshooting</li> <li>• Test equipment</li> <li>• Electric shock hazards</li> <li>• CPR</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Applicable Maintenance Instruction Manuals (MIMs)</li> <li>• Aviation Electrician's Mate 3 &amp; 2, Chapters 2 and 3 (NAVEDTRA 10348-G)</li> <li>• Naval Aircraft and Naval Support Equipment Storage Batteries, (NAVAIR 17-15BAD-1)</li> <li>• Navy Electricity and Electronics Training Series, Module 1, Chapters 1 and 2 (NAVEDTRA 172-01-00-98)</li> <li>• Navy Electricity and Electronics Training Series, Module 3, (NAVEDTRA 172-03-00-98)</li> <li>• Navy Electricity and Electronics Training Series, Module 5, Chapters 1 and 3 (NAVEDTRA 172-05-00-98)</li> <li>• Navy Electricity and Electronics Training Series, Module 16, (NAVEDTRA 172-16-00-98)</li> </ul>

	<ul style="list-style-type: none"> <li>• Navy Electricity and Electronics Training Series, Module 19, (NAVEDTRA B72-19-00-92)</li> <li>• Navy Electricity and Electronics Training Series, Module 21, Chapters 1,2, and 3 (NAVEDTRA 172-21-00-98)</li> <li>• U. S. Navy Support Equipment Common Basic Handling &amp; Safety Manual, WP 010 00 (NAVAIR 00-80T-96)</li> </ul>
<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about batteries, APU's, generators, frequency control, circuit protection, voltage control, power distribution, external power sources, test equipment, troubleshooting, electric shock, and CPR.</p>

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General AE <i>Skill Area</i>	<b>Aircraft Electrical Systems</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Troubleshoot aircraft electrical systems
Knowledge you should have to perform this skill:	<ul style="list-style-type: none"> <li>• System operation</li> <li>• Operating parameters</li> <li>• Component location and description</li> <li>• Types of test equipment</li> <li>• Use and care of test equipment</li> <li>• Basic physics</li> <li>• Troubleshooting techniques</li> </ul>
References you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Applicable Maintenance Instruction Manuals (MIMs)</li> <li>• Aviation Electrician's Mate 3 &amp; 2, Chapters 1, 2, 4, and 5 (NAVEDTRA 10348-G)</li> <li>• Aviation Maintenance Ratings, Chapters 1, 2, 4, 5, and 6 (NAVEDTRA 12017)</li> <li>• Navy Electricity and Electronics Training Series, Module 16, (NAVEDTRA 172-16-00-98)</li> <li>• Navy Electricity and Electronics Training Series, Module 21, Chapters 1, 2, 3, and 4 (NAVEDTRA 172-21-00-98)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume I, Chapters 12, 14, and 16 (OPNAVINST 4790.2)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume V, Chapter 19 (OPNAVINST 4790.2)</li> </ul>

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about principles of operation, operating parameters, component location and description, types of test equipment, use and care of test equipment, basic physics and troubleshooting techniques.</p>
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## Advancement Handbook for AE3

General AE <i>Skill Area</i>	<b>Aircraft Electrical Systems</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Replace components of aircraft electrical systems
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• Component location</li> <li>• Removal and replacement procedures</li> <li>• Aviation supply procedures</li> <li>• NAMP standard operating procedures</li> <li>• Quality assurance</li> <li>• Maintenance programs, processes, and concepts</li> <li>• Logbook records and reports</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Applicable Maintenance Instruction Manuals (MIMs)</li> <li>• Applicable Maintenance Requirement Cards (MRCs)</li> <li>• Aviation Electrician's Mate 3 &amp; 2, Chapters 2, 4, and 5 (NAVEDTRA 10348-G)</li> <li>• Aviation Maintenance Ratings, Chapters 3, 6, and 7 (NAVEDTRA 12017)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume I, Chapters 7, 10, 12, 13, and 14 (OPNAVINST 4790.2)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume V, (OPNAVINST 4790.2)</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about component location, removal and replacement procedures, aviation supply procedures, NAMP SOP, quality assurance, maintenance programs, processes, and concepts, and logbook records/reports.

## Advancement Handbook for AE3

General AE <i>Skill Area</i>	<b>Aircraft Electrical Systems</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Repair components of aircraft electrical systems
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• Wiring diagrams and schematics</li> <li>• Component operation</li> <li>• Component identification</li> <li>• Soldering</li> <li>• Electric and electronic wiring</li> <li>• Connector repair</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Applicable Maintenance Instruction Manuals (MIMs)</li> <li>• Aviation Electrician's Mate 3 &amp; 2, Chapters 4 and 6 (NAVEDTRA 10348-G)</li> <li>• Aviation Maintenance Ratings, Chapter 2 (NAVEDTRA 12017)</li> <li>• Installation Practices Aircraft Electric and Electronic Wiring (NAVAIR 01-1A-505)</li> <li>• Navy Electricity and Electronics Training Series, Module 4, (NAVEDTRA 172-04-00-98)</li> <li>• Navy Electricity and Electronics Training Series, Module 19, (NAVEDTRA 172-19-00-98)</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about wiring diagrams/schematics, component operation, component identification, soldering, connector repair, and electric/electronic wiring.



## Advancement Handbook for AE3

General AE <i>Skill Area</i>	<b>Aircraft Power Plant Electrical Systems</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Troubleshoot aircraft power plant electrical systems
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• System operation</li> <li>• Operating parameters</li> <li>• Component location and description</li> <li>• Types of test equipment</li> <li>• Use and care of test equipment</li> <li>• Types of support equipment</li> <li>• Basic physics</li> <li>• Logbook entries</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Applicable Maintenance Instruction Manuals (MIMs)</li> <li>• Aviation Electrician's Mate 3 &amp; 2, Chapters 1, 2, 3, 4, 5 and 6 (NAVEDTRA 10348-G)</li> <li>• Aviation Maintenance Ratings, Chapters 1, 2, 4, 5, and 6 (NAVEDTRA 12017)</li> <li>• Navy Electricity and Electronics Training Series, Module 16, (NAVEDTRA 172-16-00-98)</li> <li>• Navy Electricity and Electronics Training Series, Module 21, Chapters 1, 2, 3, and 4 (NAVEDTRA 172-21-00-98)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume I, Chapters 12, 13, 14, and 16 (OPNAVINST 4790.2)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume V, Chapters 3, 9, 17, 18, 19 and 20 (OPNAVINST 4790.2)</li> </ul>

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about principles of operation, operating parameters, component location and description, types of test equipment, use and care of test equipment, basic physics, oil consumption program, fuel surveillance program, hazardous material control and management program, and logbook entries.</p>
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## Advancement Handbook for AE3

General AE <i>Skill Area</i>	<b>Aircraft Power Plant Electrical Systems</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Replace components of aircraft powerplant electrical systems
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• Component location</li> <li>• Removal and replacement procedures</li> <li>• Aviation supply procedures</li> <li>• NAMP standard operating procedures</li> <li>• Quality assurance</li> <li>• Maintenance programs, processes, and concepts</li> <li>• Logbook records and reports</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Applicable Maintenance Instruction Manuals (MIMs)</li> <li>• Applicable Maintenance Requirement Cards (MRCs)</li> <li>• Aviation Electrician's Mate 3 &amp; 2, Chapters 2, 4, and 5 (NAVEDTRA 10348-G)</li> <li>• Aviation Maintenance Ratings, Chapters 3, 6, and 7 (NAVEDTRA 12017)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume I, Chapters 7, 10, 12, 13, and 14 (OPNAVINST 4790.2)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume V, (OPNAVINST 4790.2)</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about component location, removal and replacement procedures, aviation supply procedures, NAMP SOP, quality assurance, maintenance programs, processes, and concepts, and logbook records/reports.

## Advancement Handbook for AE3

General AE <i>Skill Area</i>	<b>Aircraft Power Plant Electrical Systems</b>
<i>A skill</i> you are expected to perform from the General Skill Area above:	Repair components of aircraft power plant electrical systems
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• Wiring diagrams and schematics</li> <li>• Component operation</li> <li>• Component identification</li> <li>• Soldering</li> <li>• Electric and electronic wiring</li> <li>• Connector repair</li> <li>• Calibration procedures</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Applicable Maintenance Instruction Manuals (MIMs)</li> <li>• Aviation Electrician's Mate 3 &amp; 2, Chapters 5 and 6 (NAVEDTRA 10348-G)</li> <li>• Aviation Maintenance Ratings, Chapter 2 (NAVEDTRA 12017)</li> <li>• Installation Practices Aircraft Electric and Electronic Wiring (NAVAIR 01-1A-505)</li> <li>• Navy Electricity and Electronics Training Series, Module 4, (NAVEDTRA 172-04-00-98)</li> <li>• Navy Electricity and Electronics Training Series, Module 19, (NAVEDTRA 172-19-00-98)</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about wiring diagrams/schematics, component operation, component identification, soldering, connector repair, electric/electronic wiring, and calibration procedures.

## Advancement Handbook for AE3

General AE <i>Skill Area</i>	<b>Aircraft Instruments</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Troubleshoot pitot-static systems and components
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• System operation</li> <li>• Operating parameters</li> <li>• Component location and description</li> <li>• Component operation</li> <li>• Troubleshooting Procedures</li> <li>• Types of test equipment</li> <li>• Use and care of test equipment</li> <li>• Basic physics</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Applicable Maintenance Instruction Manuals (MIMs)</li> <li>• Aviation Electrician's Mate 3 &amp; 2, Chapters 1, 2, and 6 (NAVEDTRA 10348-G)</li> <li>• Aviation Maintenance Ratings, Chapters 1, 2, 5, and 6 (NAVEDTRA 12017)</li> <li>• Navy Electricity and Electronics Training Series, Module 15, Chapters 1, 2, and 4 (NAVEDTRA 172-15-00-98)</li> <li>• Navy Electricity and Electronics Training Series, Module 16, (NAVEDTRA 172-16-00-98)</li> <li>• Navy Electricity and Electronics Training Series, Module 21, Chapters 1, 2, 3, and 4 (NAVEDTRA 172-21-00-98)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume I, Chapters 12, 14, and 16 (OPNAVINST 4790.2)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume V, Chapters 19 (OPNAVINST 4790.2)</li> </ul>

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about principles of operation, operating parameters, component location and description, types of test equipment, use and care of test equipment, and basic physics.</p>
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## Advancement Handbook for AE3

General AE <i>Skill Area</i>	<b>Aircraft Instruments</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Replace components of pitot-static systems
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• Component location</li> <li>• Removal and replacement procedures</li> <li>• Aviation supply procedures</li> <li>• NAMP standard operating procedures</li> <li>• Quality assurance</li> <li>• Maintenance programs, processes, and concepts</li> <li>• Logbook records and reports</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Applicable Maintenance Instruction Manuals (MIMs)</li> <li>• Applicable Maintenance Requirement Cards (MRCs)</li> <li>• Aviation Electrician's Mate 3 &amp; 2, Chapters 2, and 6 (NAVEDTRA 10348-G)</li> <li>• Aviation Maintenance Ratings, Chapters 3, 6, and 7 (NAVEDTRA 12017)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume I, Chapters 7, 10, 12, 13, and 14 (OPNAVINST 4790.2)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume V, (OPNAVINST 4790.2)</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about component location, removal and replacement procedures, aviation supply procedures, NAMP SOP, quality assurance, maintenance programs, processes, and concepts, and logbook records/reports.

## Advancement Handbook for AE3

General AE <i>Skill Area</i>	<b>Aircraft Instruments</b>
<i>A skill</i> you are expected to perform from the General Skill Area above:	Repair components of pitot-static systems
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• Wiring diagrams and schematics</li> <li>• Component operation</li> <li>• Component identification</li> <li>• Soldering</li> <li>• Electric and electronic wiring</li> <li>• Connector repair</li> <li>• Adjustment procedures</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Applicable Maintenance Instruction Manuals (MIMs)</li> <li>• Aviation Electrician's Mate 3 &amp; 2, Chapters 2 and 6 (NAVEDTRA 10348-G)</li> <li>• Aviation Maintenance Ratings, Chapter 2 (NAVEDTRA 12017)</li> <li>• Installation Practices Aircraft Electric and Electronic Wiring (NAVAIR 01-1A-505)</li> <li>• Navy Electricity and Electronics Training Series, Module 4, (NAVEDTRA 172-04-00-98)</li> <li>• Navy Electricity and Electronics Training Series, Module 19, (NAVEDTRA 172-19-00-98)</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about wiring diagrams/schematics, component operation, component identification, soldering, connector repair, electric/electronic wiring, and adjustment procedures.



## Advancement Handbook for AE3

General AE <i>Skill Area</i>	<b>Compass and Inertial Navigation Systems</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Troubleshoot compass and inertial navigation systems and components
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• System operation</li> <li>• Component operation</li> <li>• Operating parameters</li> <li>• Component location and description</li> <li>• Types of test equipment</li> <li>• Use and care of test equipment</li> <li>• Basic physics</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Applicable Maintenance Instruction Manuals (MIMs)</li> <li>• Aviation Electrician's Mate 3 &amp; 2, Chapters 1, 2, 6,7, and 8 (NAVEDTRA 10348-G)</li> <li>• Aviation Maintenance Ratings, Chapters 1, 2, 4, 5, and 6 (NAVEDTRA 12017)</li> <li>• Navy Electricity and Electronics Training Series, Module 15, (NAVEDTRA 172-15-00-98)</li> <li>• Navy Electricity and Electronics Training Series, Module 16, (NAVEDTRA 172-16-00-98)</li> <li>• Navy Electricity and Electronics Training Series, Module 19, (NAVEDTRA 172-19-00-98)</li> <li>• Navy Electricity and Electronics Training Series, Module 21, Chapters 1, 2, 3, and 4 (NAVEDTRA 172-21-00-98)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume I, Chapters 12, 14, and 16 (OPNAVINST 4790.2)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume V, Chapters 19 (OPNAVINST 4790.2)</li> </ul>

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about principles of operation, operating parameters, component location and description, types of test equipment, use and care of test equipment, and basic physics.</p>
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## Advancement Handbook for AE3

General AE <i>Skill Area</i>	<b>Compass and Inertial Navigation Systems</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Replace components of compass and inertial navigation systems
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• Component location</li> <li>• Removal and replacement procedures</li> <li>• Aviation supply procedures</li> <li>• NAMP standard operating procedures</li> <li>• Quality assurance</li> <li>• Maintenance programs, processes, and concepts</li> <li>• Logbook records and reports</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Applicable Maintenance Instruction Manuals (MIMs)</li> <li>• Applicable Maintenance Requirement Cards (MRCs)</li> <li>• Aviation Electrician's Mate 3 &amp; 2, Chapters 6, 7, and 8 (NAVEDTRA 10348-G)</li> <li>• Aviation Maintenance Ratings, Chapters 3, 6, and 7 (NAVEDTRA 12017)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume I, Chapters 7, 10, 12, 13, and 14 (OPNAVINST 4790.2)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume V, (OPNAVINST 4790.2)</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about component location, removal and replacement procedures, aviation supply procedures, NAMP SOP, quality assurance, maintenance programs, processes, and concepts, and logbook records/reports.

## Advancement Handbook for AE3

General AE <i>Skill Area</i>	<b>Compass and Inertial Navigation Systems</b>
<i>A skill</i> you are expected to perform from the General Skill Area above:	Repair components of compass and inertial navigation systems
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• Wiring diagrams and schematics</li> <li>• Component operation</li> <li>• Adjustment procedures</li> <li>• Component identification</li> <li>• Soldering</li> <li>• Electric and electronic wiring</li> <li>• Connector repair</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Applicable Maintenance Instruction Manuals (MIMs)</li> <li>• Aviation Electrician's Mate 3 &amp; 2, Chapters 6, 7, and 8 (NAVEDTRA 10348-G)</li> <li>• Aviation Maintenance Ratings, Chapter 2 (NAVEDTRA 12017)</li> <li>• Installation Practices Aircraft Electric and Electronic Wiring (NAVAIR 01-1A-505)</li> <li>• Navy Electricity and Electronics Training Series, Module 15, (NAVEDTRA 172-15-00-98)</li> <li>• Navy Electricity and Electronics Training Series, Module 19, Chapters (NAVEDTRA 172-19-00-98)</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about wiring diagrams/schematics, component operation, adjustment procedures component identification, soldering, connector repair, and electric/electronic wiring.

## Advancement Handbook for AE3

General AE <i>Skill Area</i>	<b>Automatic Flight Control Systems</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Troubleshoot automatic flight control systems
Knowledge you should have to perform this skill:	<ul style="list-style-type: none"> <li>• System operation</li> <li>• Operating parameters</li> <li>• Component location and description</li> <li>• Digital Computers</li> <li>• Number systems and logic circuits</li> <li>• Types of test equipment</li> <li>• Use and care of test equipment</li> <li>• Basic physics</li> </ul>
References you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Applicable Maintenance Instruction Manuals (MIMs)</li> <li>• Aviation Electrician's Mate 3 &amp; 2, Chapters 1, 2, 6 and 8 (NAVEDTRA 10348-G)</li> <li>• Aviation Maintenance Ratings, Chapters 1, 2, 4, 5, and 6 (NAVEDTRA 12017)</li> <li>• Navy Electricity and Electronics Training series, Module 13, (NAVEDTRA 172-13-00-98)</li> <li>• Navy Electricity and Electronics Training Series, Module 15, (NAVEDTRA 172-15-00-98)</li> <li>• Navy Electricity and Electronics Training Series, Module 16, (NAVEDTRA 172-16-00-98)</li> <li>• Navy Electricity and Electronics Training Series, Module 19, (NAVEDTRA 172-19-00-98)</li> <li>• Navy Electricity and Electronics Training Series, Module 21, Chapters 1, 2, 3, and 4 (NAVEDTRA 172-21-00-98)</li> <li>• Navy Electricity and Electronics Training Series, Module 22 (NAVEDTRA 172-22-00-98)</li> </ul>

	<ul style="list-style-type: none"> <li>• Naval Aviation Maintenance Program (NAMP) Volume I, Chapters 12, 14, and 16 (OPNAVINST 4790.2)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume V, Chapters 19 (OPNAVINST 4790.2)</li> </ul>
<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about principles of operation, operating parameters, component location and description, number systems and logic circuits, digital computers, types of test equipment, use and care of test equipment, and basic physics.</p>

## Advancement Handbook for AE3

General AE <i>Skill Area</i>	<b>Automatic Flight Control System</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Replace components of automatic flight control systems
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• Component location</li> <li>• Removal and replacement procedures</li> <li>• Aviation supply procedures</li> <li>• NAMP standard operating procedures</li> <li>• Quality assurance</li> <li>• Maintenance programs, processes, and concepts</li> <li>• Logbook records and reports</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Applicable Maintenance Instruction Manuals (MIMs)</li> <li>• Applicable Maintenance Requirement Cards (MRCs)</li> <li>• Aviation Electrician's Mate 3 &amp; 2, Chapters 2, 6, and 8 (NAVEDTRA 10348-G)</li> <li>• Aviation Maintenance Ratings, Chapters 3, 6, and 7 (NAVEDTRA 12017)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume I, Chapters 7, 10, 12, 13, and 14 (OPNAVINST 4790.2)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume V, (OPNAVINST 4790.2)</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about component location, removal and replacement procedures, aviation supply procedures, NAMP SOP, quality assurance, maintenance programs, processes, and concepts, and logbook records/reports.

## Advancement Handbook for AE3

General AE <i>Skill Area</i>	<b>Automatic Flight Control Systems</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Repair components of automatic flight control systems
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• Wiring diagrams and schematics</li> <li>• Component operation</li> <li>• Component identification</li> <li>• Soldering</li> <li>• Electric and electronic wiring</li> <li>• Connector repair</li> <li>• Adjustment procedures</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Applicable Maintenance Instruction Manuals (MIMs)</li> <li>• Aviation Electrician's Mate 3 &amp; 2, Chapters 2, 6, and 8 (NAVEDTRA 10348-G)</li> <li>• Aviation Maintenance Ratings, Chapter 2 (NAVEDTRA 12017)</li> <li>• Installation Practices Aircraft Electric and Electronic Wiring (NAVAIR 01-1A-505)</li> <li>• Navy Electricity and Electronics Training Series, Module 4, (NAVEDTRA 172-04-00-98)</li> <li>• Navy Electricity and Electronics Training Series, Module 19, (NAVEDTRA 172-19-00-98)</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about wiring diagrams/schematics, component operation, component identification, soldering, connector repair, electric/electronic wiring, and adjustment procedures.



## Advancement Handbook for AE3

General AE <i>Skill Area</i>	<b>Hazardous Material</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Handle hazardous materials
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• Hazardous Materials User's Guide (HMUG) procedures</li> <li>• Material Safety Data Sheets (MSDS)</li> <li>• Personal protective equipment (PPE)</li> <li>• Hazardous material inventories</li> <li>• Storage procedures</li> <li>• Cleaning and inspection procedures for hazmat containers</li> <li>• Disposal procedures</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Applicable Maintenance Instruction Manuals (MIMs)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume V, Chapter 20 (OPNAVINST 4790.2)</li> <li>• Navy Occupational Safety and Health (NAVOSH) Program Manual for Forces Afloat, Volume I, Chapter B3 (OPNAVINST 5100.19)</li> <li>• Navy Occupational Safety and Health Program Manual, Chapter 7 (OPNAVINST 5100.23)</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the use, storage, and disposal of hazardous material, including MSDS, safety precautions, PPE, inventories, and storage containers.

## Advancement Handbook for AE3

General AE <i>Skill Area</i>	<b>Quality Assurance</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform aircraft inspections
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• Types of inspections</li> <li>• Inspection intervals</li> <li>• Inspection documentation</li> <li>• Inputting NALCOMIS data</li> <li>• A/C discrepancy books (ADB)</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Applicable Maintenance Instruction Manuals (MIMs)</li> <li>• Applicable Maintenance Requirement Cards (MRCs)</li> <li>• Aviation Maintenance Ratings, Chapters 1, and 7 (NAVEDTRA 12017)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume I, Chapters 12, and 13 (OPNAVINST 4790.2)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume III, Chapter 6 (OPNAVINST 4790.2)</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about inspection types, intervals, documentation, ADB contents, and inputting NALCOMIS data.

## Advancement Handbook for AE3

General AE <i>Skill Area</i>	<b>Aviation Support</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Install/remove aircraft securing/protective devices and assist in aircraft moves
Knowledge you should have to perform this skill:	<ul style="list-style-type: none"> <li>• Chocks, struts, tiedowns, etc</li> <li>• Covers, caps, plugs, etc</li> <li>• Wing, tail, and blade walking</li> <li>• Brake ridding</li> <li>• Flight line safety</li> <li>• Types of support equipment</li> <li>• Use and care of support equipment</li> <li>• Training and licensing of support equipment</li> </ul>
References you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Applicable Maintenance Instruction Manuals (MIMs)</li> <li>• Aviation Maintenance Ratings, Chapter 5 (NAVEDTRA 12017)</li> <li>• CV NATOPS Manual, Chapter 6 (NAVAIR 00-80T-105)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume I, Chapters 10, 12, 14, and 16</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume V, Chapters 17 and 18</li> <li>• U. S. Navy Support Equipment Common Basic Handling &amp; Safety Manual, WPs 003, 004, and 005 (NAVAIR 00-80T-96)</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about securing/moving aircraft, flightline safety, types of support equipment, use and care of support equipment, and the training and licensing of support equipment.

## Advancement Handbook for AE3

General AE <i>Skill Area</i>	<b>Corrosion Control</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prevent aircraft corrosion
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• Inspection procedures</li> <li>• Types of corrosion</li> <li>• Corrosion removal</li> <li>• Corrosion treatment</li> <li>• Corrosion preventive compounds</li> <li>• Preservation</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Aircraft Weapons System Cleaning and Corrosion Control, (NAVAIR 01-1A-509)</li> <li>• Applicable Maintenance Instruction Manuals (MIMs)</li> <li>• Applicable Maintenance Requirement Cards (MRCs)</li> <li>• Aviation Maintenance Ratings, Chapter 4 (NAVEDTRA 12017)</li> <li>• Avionic Cleaning and Corrosion Prevention/Control, (NAVAIR 16-1-540)</li> <li>• Preservation of Naval Aircraft, Chapters (NAVAIR 15-01-500)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume V, Chapter 4 (OPNAVINST 4790.2)</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about corrosion inspections, identification, types, prevention, treatment, and preservation.

## Part 2

### Advancement Handbook for AE2

## Advancement Handbook for AE2

General AE <i>Skill Area</i>	<b>Aircraft Electrical Systems</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Troubleshoot aircraft electrical systems
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• System operation</li> <li>• Operating parameters</li> <li>• Component location and description</li> <li>• Types of test equipment</li> <li>• Use and care of test equipment</li> <li>• Basic physics</li> <li>• Troubleshooting techniques</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Applicable Maintenance Instruction Manuals (MIMs)</li> <li>• Aviation Electrician's Mate 3 &amp; 2, Chapters 1, 2, and 4 (NAVEDTRA 10348-G)</li> <li>• Aviation Maintenance Ratings, Chapters 1, 2, 4, 5, and 6 (NAVEDTRA 12017)</li> <li>• Navy Electricity and Electronics Training Series, Module 16, (NAVEDTRA 172-16-00-98)</li> <li>• Navy Electricity and Electronics Training Series, Module 21, Chapters 1, 2, 3, and 4 (NAVEDTRA 172-21-00-98)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume I, Chapters 12, 14, and 16 (OPNAVINST 4790.2)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume V, Chapter 19 (OPNAVINST 4790.2)</li> </ul>

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about principles of operation, operating parameters, component location and description, types of test equipment, use and care of test equipment, basic physics and troubleshooting techniques.</p>
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## Advancement Handbook for AE2

General AE <i>Skill Area</i>	<b>Compass and Inertial Navigation Systems</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform compass swings
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• System operation</li> <li>• Component operation</li> <li>• Operating parameters</li> <li>• Component location and description</li> <li>• Types of test equipment</li> <li>• Use and care of test equipment</li> <li>• Types of support equipment</li> <li>• Use and care of support equipment</li> <li>• Training and licensing of support equipment</li> <li>• Basic physics</li> <li>• Logbooks</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Applicable Maintenance Instruction Manuals (MIMs)</li> <li>• Applicable Maintenance Requirement Cards (MRCs)</li> <li>• Aviation Electrician's Mate 3 &amp; 2, Chapters 1, 2, and 7 (NAVEDTRA 10348-G)</li> <li>• Aviation Maintenance Ratings, Chapters 1, 2, 5, 6, and 7 (NAVEDTRA 12017)</li> <li>• Navy Electricity and Electronics Training Series, Module 15, (NAVEDTRA 172-15-00-98)</li> <li>• Navy Electricity and Electronics Training Series, Module 16, (NAVEDTRA 172-16-00-98)</li> <li>• Navy Electricity and Electronics Training Series, Module 19, (NAVEDTRA 172-19-00-98)</li> <li>• Navy Electricity and Electronics Training Series, Module 21, Chapters 1, 2, 3, and 4 (NAVEDTRA 172-21-00-98)</li> </ul>



	<ul style="list-style-type: none"> <li>• Naval Aviation Maintenance Program (NAMP) Volume I, Chapters 12, 14, and 16 (OPNAVINST 4790.2)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume V, Chapters 17, 18, and 19 (OPNAVINST 4790.2)</li> </ul>
<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about principles of operation, operating parameters, component location and description, adjustment procedures, types of test equipment, use and care of test equipment, types of support equipment, use and care of support equipment, the training and licensing of support equipment, basic physics, and logbook entries.</p>

## Advancement Handbook for AE2

General AE <i>Skill Area</i>	<b>Quality Assurance</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform aircraft inspections
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• Types of inspections</li> <li>• Inspection intervals</li> <li>• Inspection documentation</li> <li>• Inputting NALCOMIS data</li> <li>• Audit reports</li> <li>• A/C discrepancy books (ADB)</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Applicable Maintenance Instruction Manuals (MIMs)</li> <li>• Applicable Maintenance Requirement Cards (MRCs)</li> <li>• Aviation Maintenance Ratings, Chapters 1, and 7 (NAVEDTRA 12017)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume I, Chapters 12, and 13 (OPNAVINST 4790.2)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume III, Chapter 6 (OPNAVINST 4790.2)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume V, Chapter 8 (OPNAVINST 4790.2)</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about inspection types, intervals, documentation, ADB contents, audit program, and inputting NALCOMIS data.

## Part 3

### Advancement Handbook for AE1

## Advancement Handbook for AE1

General AE <i>Skill Area</i>	<b>Hazardous Material</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Establish HAZMAT waste disposal methods
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• Hazardous Materials User's Guide (HMUG) procedures</li> <li>• Material Safety Data Sheets (MSDS)</li> <li>• Personal protective equipment (PPE)</li> <li>• Hazardous material inventories</li> <li>• Storage procedures</li> <li>• Cleaning and inspection procedures for hazmat containers</li> <li>• Disposal procedures</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Applicable Maintenance Instruction Manuals (MIMs)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume V, Chapter 20 (OPNAVINST 4790.2)</li> <li>• Navy Occupational Safety and Health (NAVOSH) Program Manual for Forces Afloat, Volume I, Chapter B3 (OPNAVINST 5100.19)</li> <li>• Navy Occupational Safety and Health Program Manual, Chapter 7 (OPNAVINST 5100.23)</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the use, storage, and disposal of hazardous material, including MSDS, safety precautions, PPE, inventories, and storage containers.

## Advancement Handbook for AE1

General AE <i>Skill Area</i>	<b>Quality Assurance</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Manage Naval Aviation Maintenance Discrepancy Reporting Program
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• Types of reports</li> <li>• Submission procedures</li> <li>• Discrepancy trends</li> <li>• Record keeping</li> <li>• Reporting criteria</li> <li>• Dispersed Technical Publications Library</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Applicable Maintenance Instruction Manuals (MIMs)</li> <li>• Aviation Maintenance Ratings, Chapters 1, and 6 (NAVEDTRA 12017)</li> <li>• Naval Air Systems Command Technical Manual Program WPs 005, 007, 010, 014, 015, 019, and 022 (NAVAIR 00-25-100)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume I, Chapters 12, 13, and 14 (OPNAVINST 4790.2)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume V, Chapter 10 (OPNAVINST 4790.2)</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about types of reports, submission procedures, reporting criteria, record keeping, discrepancy trends and the dispersed technical publications library.

## Advancement Handbook for AE1

General AE <i>Skill Area</i>	<b>Maintenance Administration</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Review A/C Equipment Records, Scheduled Removal Component Cards, and Periodic Maintenance Information Cards
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• Purpose</li> <li>• Data fields</li> <li>• Required Entries</li> <li>• Filing procedures</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Applicable Maintenance Requirement Cards (MRCs)</li> <li>• Aviation Maintenance Ratings, Chapter 7 (NAVEDTRA 12017)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume I, Chapter 13 (OPNAVINST 4790.2)</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the purpose, data fields, required entries, and filing procedures

## Advancement Handbook for AE1

General AE <i>Skill Area</i>	<b>Maintenance Administration</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Review A/C Maintenance Data Reports (MDRs)
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• Contents</li> <li>• Use</li> <li>• Types</li> <li>• Purpose</li> <li>• Data</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Aviation Maintenance Ratings, Chapter 1 (NAVEDTRA 12017)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume I, Chapters 12 and 15 (OPNAVINST 4790.2)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume III, Chapters 2, 3, 4, 5, and 6 (OPNAVINST 4790.2)</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect to see questions about the contents, use, types, purpose, and the data of MDRs

## Advancement Handbook for AE1

General AE <i>Skill Area</i>	<b>Maintenance Administration</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Maintain Individual Component Repair Lists (ICRL)
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• Purpose</li> <li>• Contents</li> <li>• Codes</li> <li>• Change procedures</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Aviation Maintenance Ratings, Chapter 3 (NAVEDTRA 12017)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume I, Chapters 12 and 18 (OPNAVINST 4790.2)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume V, Chapter 21 (OPNAVINST 4790.2)</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect to see questions about the purpose, contents, codes, and change procedures for the ICRL.



## Part 4

### Advancement Handbook for AEC

## Advancement Handbook for AEC

General AE <i>Skill Area</i>	<b>Maintenance Administration</b>
A <i>skill</i> you are expected to perform from the General Skill Area above:	Certify aircraft safe for flight
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> <li>• Aircraft Discrepancy Books (ADBs)</li> <li>• Logs and Records</li> <li>• Scheduled and Unscheduled Maintenance Actions</li> <li>• Naval Aviation Maintenance Program Standard Operating Procedures</li> <li>• Subsystem Capability Impact Reporting (SCIR)</li> </ul>
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> <li>• Maintenance Instruction Manuals (MIMs)</li> <li>• Applicable Maintenance Requirement Cards (MRCs)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume I, (OPNAVINST 4790.2)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume III, (OPNAVINST 4790.2)</li> <li>• Naval Aviation Maintenance Program (NAMP) Volume V, (OPNAVINST 4790.2)</li> </ul>
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about ADBs, logbooks, maintenance actions, aircraft reports, SCIR, and the Naval Aviation Maintenance Program Standard Operating Procedures.

## Appendix A

### References Used in This Advancement Handbook

<b>Rating</b>	<b>Short Title</b>	<b>Long Title</b>	<b>Chapters/ Paragraphs</b>	<b>Stocking Point</b>
<b>AE3</b>		Applicable Maintenance Instruction Manual (MIMs)		
		Applicable Maintenance Requirements Cards (MRCs)		
	NAVAIR 00-80T-105	C V NATOPS Manual	Chapter 6	Note 1
	NAVAIR 00-80T-96	U. S. Navy Support Equipment Common Basic Handling & Safety Manual	Work Packages 003, 004, 005, and 010	Note 1
	NAVAIR 01-1A-505	Installation Practices Aircraft Electric and Electronic Wiring	All Work Packages	Note 1
	NAVAIR 01-1A-509	Aircraft Weapons Systems Cleaning and Corrosion Control	All Chapters and Appendices	Note 1
	NAVAIR 15-01-500	Preservation of Naval Aircraft	All Chapters and Appendices	Note 1
	NAVAIR 16-1-540	Avionic Cleaning and Corrosion and Corrosion/Prevention	All Chapters and Appendices	Note 1
	NAVAIR 17-15BAD –1	Naval Aircraft and Naval Support Equipment Storage Batteries	All Chapters and Appendices	Note 1
	NAVEDTRA 172-01-00-98	Navy Electricity and Electronics Training Series, Module 1	All Chapters	Note 1
	NAVEDTRA 172-02-00-98	Navy Electricity and Electronics Training Series, Module 2	All Chapters	Note 1

<b>Rating</b>	<b>Short Title</b>	<b>Long Title</b>	<b>Chapters/ Paragraphs</b>	<b>Stocking Point</b>
<b>AE3 (Cont)</b>	NAVEDTRA 172-03-00-98	Navy Electricity and Electronics Training Series, Module 3	All Chapters	Note 1
	NAVEDTRA 172-04-00-98	Navy Electricity and Electronics Training Series, Module 4	All Chapters	Note 1
	NAVEDTRA 172-05-00-98	Navy Electricity and Electronics Training Series, Module 5	All Chapters	
	NAVEDTRA 172-06-00-98	Navy Electricity and Electronics Training Series, Module 6	Chapter 3	Note 1
	NAVEDTRA 172-07-00-98	Navy Electricity and Electronics Training Series, Module 7	All Chapters	Note 1
	NAVEDTRA 172-13-00-98	Navy Electricity and Electronics Training Series, Module 13	All Chapters	Note 1
	NAVEDTRA 172-15-00-98	Navy Electricity and Electronics Training Series, Module 15	All Chapters	Note 1
	NAVEDTRA 172-16-00-98	Navy Electricity and Electronics Training Series, Module 16	All Chapters	Note 1
	NAVEDTRA 172-19-00-98	Navy Electricity and Electronics Training Series, Module 19	All Chapters	Note 1
	NAVEDTRA 172-21-00-98	Navy Electricity and Electronics Training Series, Module 21	Chapters 1 through 4	Note 1
	NAVEDTRA 172-22-00-98	Navy Electricity and Electronics Training Series, Module 22	All Chapters	Note 1
	NAVEDTRA 10348-G	Aviation Electrician's Mate 3 & 2	All Chapters and Appendices	Note 1
	NAVEDTRA 12017	Aviation Maintenance Ratings	All Chapters and Appendices	Note 1
	OPNAVINST 4790.2	Naval Aviation Maintenance Program, Volume I	Chapters 7, 10, 12, 13, 14, and 16	Note 2

<b>Rating</b>	<b>Short Title</b>	<b>Long Title</b>	<b>Chapters/ Paragraphs</b>	<b>Stocking Point</b>
<b>AE3 (Cont)</b>	OPNAVINST 4790.2	Naval Aviation Maintenance Program, Volume III	Chapter 6	Note 2
	OPNAVINST 4790.2	Naval Aviation Maintenance Program, Volume V	All Chapters	Note 2
	OPNAVINST 5100.19	Naval Occupational Safety and Health (NAVOSH) Program Manual for Forces Afloat Volume I	Chapter B3	Note 2
	OPNAVINST 5100.23	Naval Occupational Safety and Health Program Manual	Chapter 7	Note 2
<b>AE2</b>		Applicable Maintenance Instruction Manual (MIMs)		
		Applicable Maintenance Requirements Cards (MRCs)		
	NAVEDTRA 172-15-00-98	Navy Electricity and Electronics Training Series, Module 15	All	Note 1
	NAVEDTRA 172-16-00-98	Navy Electricity and Electronics Training Series, Module 16	All	Note 1
	NAVEDTRA 172-19-00-98	Navy Electricity and Electronics Training Series, Module 19	All	Note 1
	NAVEDTRA 172-21-00-98	Navy Electricity and Electronics Training Series, Module 21	Chapters 1, 2, 3, and 4	Note 1
	NAVEDTRA 10348-G	Aviation Electrician's Mate 3&2	1, 2, 4, and 7	Note 1
	NAVEDTRA 12017	Aviation Maintenance Ratings	Chapters 1, 2, 4, 5, 6, & 7	Note 1
	OPNAVINST 4790.2	Naval Aviation Maintenance Program, Volume I	Chapters 12, 13, 14, & 16	Note 2

<b>Rating</b>	<b>Short Title</b>	<b>Long Title</b>	<b>Chapters/ Paragraphs</b>	<b>Stocking Point</b>
<b>AE2 (Cont)</b>	OPNAVINST 4790.2	Naval Aviation Maintenance Program, Volume III	Chapter 6	Note 2
	OPNAVINST 4790.2	Naval Aviation Maintenance Program, Volume V	Chapters 8,17, 18, and 19	Note 2
<b>AE1</b>		Applicable maintenance instruction manuals (MIMs)		
		Applicable maintenance requirements cards (MRCs)		
	NAVAIR 00-25-100	Naval Air Systems Command Technical Manual Program	Work Packages 005, 007, 010, 014, 015, 019, & 022	Note 1
	NAVEDTRA 12017	Aviation Maintenance Ratings	Chapters 1, 3, 6, and 7	Note 1
	OPNAVINST 4790.2	Naval Aviation Maintenance Program, Volume I	Chapters 12, 13, 14, 15, and 18	Note 2
	OPNAVINST 4790.2	Naval Aviation Maintenance Program, Volume III	Chapters 2, 3, 4, 5, and 6	Note 2
	OPNAVINST 4790.2	Naval Aviation Maintenance Program, Volume V	Chapters 10, 20, and 21	Note 2
	OPNAVINST 5100.19	Naval Occupational Safety and Health (NAVOSH) Program Manual for Forces Afloat Volume I	Chapter B3	Note 2
	OPNAVINST 5100.23	Naval Occupational Safety and Health Program Manual	Chapter 7	Note 2

<b>Rating</b>	<b>Short Title</b>	<b>Long Title</b>	<b>Chapters/ Paragraphs</b>	<b>Stocking Point</b>
<b>AEC</b>		Applicable maintenance instruction manuals (MIMs)		
		Applicable maintenance requirements cards		
	OPNAVINST 4790.2	Naval Aviation Maintenance Program, Volume I	All Chapters	Note 2
	OPNAVINST 4790.2	Naval Aviation Maintenance Program, Volume III	All Chapters	Note 2
	OPNAVINST 4790.2	Naval Aviation Maintenance Program, Volume V	All Chapters	Note 2
<p><b>LEGEND:</b></p> <p>Note 1 – To order, MILSTRIP to NAVICP PHILA or via INTERNET  <a href="http://www.nll.navsup.navy.mil/">http://www.nll.navsup.navy.mil/</a></p> <p>Note 2 – INTERNET-<a href="http://neds.nebt.daps.mil/">http://neds.nebt.daps.mil/</a></p>				